

irradiation light" and wherein the metal particles are "made of a metal which is diffusible in said chalcogenide glass by irradiation of said light," as required in claim 13.

The Office Action cites Kasai at Example 2 and alleges that the silver disclosed therein is a diffusible metal that is dispersed in a chalcogenide glass material. See Office Action at page 2.

The silver atoms diffused in Ge_2S_3 material in Kasai are not dispersed metal particles within the meaning of the claims. In particular, claim 13 refers to "metal particles dispersed" and "metal which is diffusible," as well as "metal is diffused in said chalcogenide glass by irradiating said recording light." The words dispersed and diffused in claim 13 clearly have different meanings and should be construed accordingly. See, e.g., *Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc.*, 381 F.3d 1111, 1119-20, 72 USPQ2d 1001 (Fed. Cir. 2004) ("when an applicant uses different terms in a claim it is permissible to infer that he intended his choice of different terms to reflect a differentiation in the meaning of those terms"). Specifically, the dispersed metal particles in the claimed embodiments cannot reasonably be interpreted to mean metal atoms diffused by light irradiation.

In this regard, the claims require that the metal particles are dispersed in the chalcogenide glass and become diffused in the chalcogenide glass by irradiating recording light on the recording medium. As stated in the specification, the dispersed metal particles in one exemplary embodiment have an average particle size of about 10 nm. Upon radiation, the particles diffuse into the chalcogenide glass medium. This diffusion phenomenon is known as light doping. See specification at paragraph [0025].

Example 2 of Kasai cited in the Office Action discloses that a silver layer is formed on the another layer and subjected to light "to diffuse the Ag of the diffusible metal layer completely and mutually into the Ge_2S_3 layers so that an Ag-Ge-S chalcogenide glass is prepared." See Kasai at col. 13, lines 65-68. Kasai therefore discloses that the silver is

diffused into the non-metallic layer upon irradiation with light. Notably, Kasai itself refers to this phenomenon as diffusion, not dispersion. See col. 7, lines 56-59 ("In these cases, the material containing a metal can be produced by utilizing diffusion phenomenon of the metal into the chalcogen element or the chalcogenide due to radiation energy."). Kasai does not disclose or suggest that the silver exists in the Ge_2S_3 layer as metal particles. Although Kasai teaches a subsequent recordation step by radiation, the recording medium exists with diffused metal atoms in the Ge_2S_3 substrate, i.e., a Ag-Ge-S substrate, not as dispersed metal particles in a chalcogenide medium as required in the claims.

The Examiner's proposed interpretation of the claim language improperly equates the claim terms "dispersed in" with "diffused in." Under applicable claim construction law such an interpretation is improper in view of the clearly different uses of such terms in Applicants' claims and specification. Thus, for the above reasons, the applied references fail to disclose a recording layer that includes metal particles dispersed in chalcogenide glass. Accordingly, independent claim 13 is patentable over the applied references.

Independent claim 24 recites similar features to those referred to above, and is therefore also patentable over the applied references.

Furthermore, the applied references do not disclose or suggest a recording step for the chalcogenide glass "wherein the angle of said reference light is varied," as recited in claim 13.

The Examiner cites King as allegedly teaching a recording step including varying the angle of the reference light. See Office Action at page 7. The Examiner acknowledges that King does not employ a recording medium including photodoped chalcogenide glass, but alleges that because Slinger teaches holographic recording in chalcogenides. Thus, the Examiner alleges that "specific holographic recording methods including angle multiplexing can be employed in any material capable of being recorded using holographic recording in general."

The Examiner does not provide any reasoning or rationale why a skilled artisan would expect the angle multiplexing technique in King to successfully be used in a chalcogenide material. King uses an entirely different recording medium including a reflective substrate, a polarization shifting layer, and a photopolymer. See Abstract and col. 7, lines 49-55. There is no suggestion in King or Slinger that similar techniques could be used for recording chalcogenide materials. Furthermore, the assertion that any recording technique can be used in any recording material is not supported by the references. Accordingly, the Office Action has failed to provide explicit "articulated reasoning with a rational underpinning" to support its legal conclusion of obviousness. *KSR Int'l Co. v. Teleflex, Inc.*, No. 04-1350, slip op. at 14 (U.S. April 30, 2007), *citing In re Khan*, 441 F.3d 977, 988 (Fed. Cir. 2006). Accordingly, claim 13 is also patentable over the applied references for this additional reason.

Claim 24 recites that "the recording light is varied in the direction of depth of the recording layer in the recording step." The Examiner cites Hosono as allegedly disclosing this feature. However, as with claim 13, Hosono does not disclose recording in chalcogenides and the Office Action does not provide any reason or rationale why a skilled artisan would expect similar techniques to work in chalcogenide materials. Accordingly, for this additional reason, claim 24 is also patentable over the applied references.

Claim 15 depends from claim 13 and is therefore also patentable over the applied references for at least the reasons enumerated above, as well as for the additional features it recites.

Accordingly, withdrawal of the rejections is respectfully requested.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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